

Further Observations on the West American Marginellidae With the Descriptions of Two New Species

BY

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(Plate 7; 2 Text figures; 1 Map)

IN OUR ACCOUNT OF THE west American Marginellidae (COAN & ROTH, 1966), we stated that with further work on the family, especially the examination of more specimens, our ideas would probably change. In addition, we felt certain that the article would arouse interest among workers, both to study the material they had on hand and to collect additional specimens. Both anticipations have proved correct. We have accumulated comments adding to and correcting our published account. It seems appropriate to make the new information available at this time.

1. *Marginella (Prunum) sapotilla* HINDS, 1844

(Plate 7, Figures 1, 2)

COAN & ROTH, 1966: 279-280; pl. 48, figs. 1-3; text fig. 1

Photographs of the lectotype of *Marginella evax* LI, 1930, are presented on the Plate. The synonymy of *M. evax* and *M. (P.) sapotilla* remains certain. Because LI's photograph was poor and because his article is not readily available, illustrations of this lectotype are included here.

In addition we are able to refine the distributional information. The species has been found from Bahía Honda, Panama, to Bella Vista, Panama, and as far off the mainland as Isla Pedro Gonzales in the Bay of Panama. Ecuadorian records remain uncertain. PARKER (1964) reported it from the Gulf of California. His specimen is in the Museum of Comparative Zoology at Harvard University and proves to be a young *Olivella*.

2. *Marginella (Prunum) albuminosa* DALL, 1919

(Plate 7, Figures 3, 4)

COAN & ROTH, 1966: 281-282; pl. 48, fig. 11

Records and correspondence in the Division of Mollusks at the United States National Museum indicate that Dr. Alfred Dugés sent the unique specimen, along with other material, to Dall in 1895, and that Dall initially identified it as *Marginella (Prunum) curta* SOWERBY, 1832. There is some indication that Dugés' shipment may have been poorly packed and have arrived at the USNM somewhat mixed. Thus there is additional reason to doubt the occurrence of this species in the west American fauna. Correspondence in the USNM files suggests that Dugés may also have sent some of his material to the Paris Museum, but a search there prompted by our inquiry turned up nothing. We have not yet located other specimens of this species from any province in any museum.

STANTON (1966) reported a specimen of *Marginella (Prunum)* from the Castaic Formation (Upper Miocene) of Los Angeles County, California, as "*Marginella cf. M. albuminosa* DALL." This is a new geologic record for the family and genus in northwest America. STANTON's species will probably require a name of its own in light of the continuing doubt about Dugés' type specimen.

Two better photographs of the holotype of *Marginella albuminosa* are provided here.

3. *Persicula porcellana* (Gmelin, 1791)

(Plate 7, Figures 5, 6)

COAN & ROTH, 1966: 282-283 (pars); pl. 48, figs. 12-15; non *ibid.*: pl. 48, figs. 16-17

In our earlier article we designated one of the specimens therein illustrated (pl. 48, figs. 14, 15) "lectotype" of *Marginella tessellata* LAMARCK, 1822 - a mistake, since, as the only specimen in the Lamarckian collection, it is assuredly the holotype. At the same time we designated the identical specimen neotype of Gmelin's *Voluta porcellana* - the specimen figured by CHEMNITZ (1788: pl. 150, figs. 1419, 1420), on which Gmelin based his species, having been lost. We hoped to stabilize nomenclature by this step, which we took after consultation with several other malacologists. At the time of that writing we had examined many west American specimens, but no Caribbean ones. Now we have seen, from the Caribbean, specimens that look like LAMARCK's type and still others which closely resemble the original CHEMNITZ figures. Some species of *Persicula* are morphologically consistent; others show considerable variation even within local populations (COAN & ROTH, 1966: pp. 284-285). We suspect that there is only one, somewhat variable species in the Caribbean. In light of the Caribbean specimens, there is much less doubt what form Chemnitz had; in the absence of serious doubt, our neotype designation seems superfluous. Since it helps stabilize the nomenclature, however, and since its retraction could cause needless additional confusion, we intend to let the designation stand.

Lamarck's holotype of *Marginella tessellata* is illustrated here with two better photographs. It is without locality data, but most likely came from the Caribbean, considering the early date of Lamarck's publication. *Voluta porcellana* was incorrectly stated by Gmelin to have come from the Indian Ocean.

While the Atlantic species retains the name *Persicula porcellana*, the Pacific species, isolated from it since the Pliocene by the Isthmus of Panama, requires a new name as follows:

Persicula accola ROTH & COAN, spec. nov.

(Plate 7, Figures 7, 8 - Holotype)

Persicula porcellana (Gmelin), COAN & ROTH, 1966: 282-283 (pars); pl. 48, figs. 16-17; non Gmelin, 1791: 3449 (species 139)

Description of Holotype: Shell of moderate size, solid; elongate-ovate, narrower anteriorly; pale yellowish-tan, with about 10 spiral rows of dark reddish-brown, more or less rectangular blotches which show a tendency toward doubling with maturity; entirely covered with a

thin glaze of translucent whitish enamel; outer lip thickened, finely denticulate, white, tinged with brown along outer edge; inner lip covered by a pad of white callus; spire low, covered with clear enamel, circled by a solid brown band; aperture even, slightly wider anteriorly, white within; anterior canal deep, oblique; columella with 7 folds, second fold from anterior end widest, most anterior fold at base of columella.

Dimensions of Holotype: Length 13 mm; width 8.2 mm.

Paratypes: Of the 3 paratypes, 2 are worn mature specimens and 1 is a live-collected, sub-mature specimen with a sharp, uncalloused outer lip. All 3 differ very slightly from the holotype in arrangement of the rows of brown blotches.

Dimensions of Paratypes:

1: Length 12.5 mm; width 7.5 mm (live)

2: Length 13.3 mm; width 8.2 mm

3: Length 12.2 mm; width 7.2 mm

Type Locality: Isla Coiba, Panama (about 7°30' N by 81°45' W); collected by A. Mendez.

Discussion: The pattern of rows of rectangular blotches distinguishes *Persicula accola* from all other west American species of the genus. A key to the west American species (in which this species is identified as "*Persicula porcellana*") appears in COAN & ROTH, 1966, p. 278.

This species is morphologically very similar to its Caribbean analogue, *Persicula porcellana* (Gmelin). Although museums contain only a few lots of each species from which to make comparisons, some minor differences have been noted. First, the west American species is broadest much posterior to the middle of the body whorl, while the Caribbean one tends to be more nearly ellipsoidal. *Persicula porcellana* tends also to be more obese. Second, as in the Chemnitz figures mentioned above, *P. porcellana* may have smaller spots, especially in the northern part of its range - Honduras, Panama, Venezuela. Brazilian specimens have larger spots. *Persicula accola* has, in general, larger, squarer spots. Third, the posterior end of the outer lip of the Caribbean species tends to be produced slightly more than that of the west American form.

Etymology: The specific name derives from the Latin noun for "neighbor."

Material Examined and Range: This species has evidently been collected only 4 times, and 2 of these lots have been divided among several museums. The recorded localities are Isla Coiba, Isla Jicarón, and Bahía Montijo, all in roughly the same area of Panama.

Deposition of Types: Holotype: USNM 513647; Paratypes (3): USNM 665526.

4. *Persicula bandera* COAN & ROTH, 1965

COAN & ROTH, 1965: 67-69; pl. 12, figs. 1-5
COAN & ROTH, 1966: 285; pl. 50, figs. 38, 39

When first describing *Persicula bandera*, we compared it to the closely related *P. hilli* (SMITH, 1950), but not to any species from the Atlantic. We have recently obtained a photograph of the holotype of *Marginella multilineata* SOWERBY, 1846 from the British Museum (Natural History) (Plate 7, Figures 9, 10); that species is a *Persicula*, very similar to *P. bandera*.

Marginella multilineata was described from a specimen in the Cuming collection, picked up by a Mr. Dyson at "Belieze [sic], Bay of Honduras." Belize, British Honduras, and the Gulf of Honduras are on the Atlantic coast of Central America; and other Dyson-collected material from "Honduras" has proven to be Atlantic, so there is no reason to doubt the Caribbean locality. REEVE (1865) compared *M. multilineata* to *M. interrupta* LAMARCK, 1822 (= *Persicula interruptolineata* [MEGERLE VON MÜHLFELD, 1816]), a variable Caribbean and west African species; and TOMLIN (1917) incorrectly synonymized the two.

It seems plausible that, as with so many other marginellids, analogous Atlantic and Pacific species are involved. If it ever were to be shown conclusively that Dyson's shell came from the Pacific side of Central America, the name *Persicula bandera* would become a synonym of *P. multilineata* (SOWERBY, 1846).

5. *Persicula hilli* (SMITH, 1950)

(Plate 7, Figures 11, 12)

COAN & ROTH, 1966: 285; pl. 50, figs. 40, 41

At the time of our earlier review, we were unable to locate the type specimens of this species. Through the

courtesy of Dr. Herbert T. Boschung, we have been loaned the type lot from the Maxwell Smith collection in the Museum of Natural History at the University of Alabama at Tuscaloosa. The type lot consists of 4 specimens. SMITH (1950: pl. 4, fig. 6) figured 2 of these. We hereby designate as lectotype the specimen we have illustrated here — the specimen which SMITH figured in ventral view — leaving 3 paralectotypes. The lectotype measures 14.7 mm in length and 9.7 mm in width. SMITH's figured paralectotype is 14.5 mm long and 9.2 mm wide.

6. *Volvarina* sp., cf. *V. taeniolata* MÖRCH, 1860

Among uncatalogued material at Stanford University, we have seen one immature specimen belonging to the genus *Volvarina*, collected at Salinas, Ecuador, in 1951 by Dr. Donald L. Frizzell. This specimen extends the known west American range of the genus to South America. Adult specimens will have to be studied to determine whether this is Mörch's species.

7. *Cystiscus politulus* (DALL, 1919)

(Plate 7, Figures 13, 14; Map)

COAN & ROTH, 1966: 290-291; pl. 51, fig. 64

Hyalina myrmecoon DALL, 1919: 308

Cystiscus myrmecoon (DALL), COAN & ROTH, 1966: 291; pl. 51, fig. 65

Examination of additional material now leads us to synonymize these two species. Since both of DALL's names date from the same article, we are acting as "first

Explanation of Plate 7

Figures 1, 2: *Marginella (Prunum) sapotilla* HINDS, 1844. Lectotype of *Marginella evax* L. Columbia Univ. Paleo. Coll. 22118; Panama Bay, × 2.1 (ventral and dorsal views)
 Figures 3, 4: *Marginella (Prunum) albuminosa* DALL, 1919. Holotype, USNM 10168, "West Mexico," × 1.5 (ventral and dorsal views)
 Figures 5, 6: *Persicula porcellana* (GMELIN, 1791). Neotype of *Volva porcellana* GMELIN and holotype of *Marginella tessellata* LAMARCK, Mus. Hist. Nat. Geneva, no locality given; × 2.1 (ventral and dorsal views). Photographs courtesy of Dr. E. Binder
 Figures 7, 8: *Persicula accola* ROTH & COAN, spec. nov. Holotype, USNM 513647, Isla Coiba, Panama, × 3 (ventral and dorsal views)
 Figures 9, 10: *Persicula multilineata* (SOWERBY, 1846). Holotype, British Museum (Natural History), Cuming Coll., "Belieze, Bay of Honduras," × 3 (ventral and dorsal views). Photographs courtesy of and © by British Museum (Natural History)
 Figures 11, 12: *Persicula hilli* (SMITH, 1950). Lectotype, Univ. Alabama, Maxwell Smith Coll. 15374, Bahía Chamelá, Jalisco, Mexico, × 2.6 (ventral and dorsal views)

Figures 13, 14: *Cystiscus politulus* (DALL, 1919). Hypotype, USNM 268953, Bahía Magdalena, Baja California Sur, Mexico, 25 m, × 9 (ventral and dorsal views)
 Figure 15: *Cystiscus jewettii* (CARPENTER, 1857). Hypotype, SU PTC 9943, Punta Abrejos, Baja California Sur, Mexico, × 8.8 (ventral view)
 Figure 16: *Cystiscus jewettii*. Hypotype, CASGTC 13107, Point Pinos, Monterey County, California, × 8.8 (ventral view)
 Figures 17, 18: *Cystiscus palantirulus* ROTH & COAN, spec. nov. Holotype, AMNH 128732, Los Frailes Bay, Baja California Sur, Mexico, 37-73 m, × 8.8 (ventral and dorsal views)
 Figure 19: *Kogomea polita* (CARPENTER, 1857). Lectotype, British Museum (Natural History) 57.6.4.2108/1, Mazatlán, Sinaloa, Mexico, × 35 (ventral view). Photograph courtesy of and © by British Museum (Natural History)
 Figure 20: *Cypraeolina margaritula* (CARPENTER, 1857). Lectotype, British Museum (Natural History) 57.6.4.2109/1, Mazatlán, Sinaloa, Mexico, × 16.8 (ventral view). Photograph courtesy of and © by British Museum (Natural History)



Figure 1

Figure 2



Figure 3

Figure 4

Figure 5



Figure 6

Figure 7

Figure 8

Figure 9

Figure 10



Figure 11

Figure 12

Figure 13

Figure 14

Figure 15



Figure 16

Figure 17

Figure 18

Figure 19

Figure 20

Ranges of the West American Species of *Cystiscus*

revisers" in the sense of Article 24a of the International Code of Zoological Nomenclature. The holotype of *Hyalina myrmecoon* is simply an elongate specimen of *Cystiscus politulus*.

Additional range records include the southern Gulf of California (Map). The Los Angeles County Museum of Natural History collection includes specimens recently collected by Dr. James H. McLean at Cabo San Lucas, Pulmo Reef, and Isla Cerralvo, Baja California Sur. We have tentatively determined as *Cystiscus politulus* a poor specimen from Bahía de las Banderas, mainland Mexico, so collectors should keep watch for the species in that area as well.

A specimen from Bahía Magdalena on the outer coast of Baja California Sur is here illustrated and discussed in connection with the description of a new species.

8. *Cystiscus jewettii* (CARPENTER, 1857 a)

(Plate 7, Figures 15, 16; Text figure 1; Map)

COAN & ROTH, 1966: 291; pl. 51, figs. 66-68

From its previously reported distribution (Monterey, California, to Isla San Martin and Isla Guadalupe, Baja California) we can now extend the known range southward to Punta Abrejos, Baja California Sur. Note that this is still considerably north of the range of the next species. We are illustrating a specimen from Punta Abrejos and one from the northern end of the range, Point Pinos, Monterey County, California, for comparison with the new species described below.

Cystiscus jewettii is common in the intertidal area at Pacific Grove, Monterey County, California, where specimens were collected and observed in August, 1967 (Text figure 1). Throughout the period of observation, the

mantle was never extruded over the top of the shell of *C. jewettii* in the manner of *Cypraeolina margaritula* in the same dish.

9. *Cystiscus palantirulus* ROTH & COAN, spec. nov.

(Plate 7, Figures 17, 18 [Holotype]; Map)

Cystiscus sp., COAN & ROTH, 1966: 291-292; pl. 51, figs. 69-70

We have now seen a sufficient number of specimens of this form to propose a name for it.

Description of Holotype: Shell pear-shaped, broad and evenly rounded posteriorly, elongate and narrow anteriorly; white, smooth, highly polished; spire very low, covered by irregular callousing; outer lip extending high on body whorl, forming a 90° arc slightly anterior to the spire, most strongly thickened by callus posteriorly; apertural margin (columellar area) forming a long S-curve, concave anteriorly, very bulbous posteriorly, scarcely thickened by callus, with 2 large folds at base of columella and 4 smaller ones posterior to them, evenly decreasing in size, extending very slightly onto face of body whorl; aperture moderately wide anteriorly; anterior margin of aperture rounded; anterior end slightly flaring and twisted toward columella.

Dimensions of Holotype: Length 3.5 mm; width 2.1 mm.

Dimensions of Paratypes:

1. Length 3.1 mm; width 1.7 mm

2. Length 3.2 mm; width 1.7 mm

Paratypes: The two paratypes differ from the holotype in the following details: the apex of Paratype 1 projects as a minute nubbin; the apex of Paratype 2 is worn to a smooth dome; in curving to meet the spire, the outer lip of Paratype 1 changes direction by less than 90°.



Figure 1

Cystiscus jewettii (CARPENTER, 1857)

Living specimen, Pacific Grove, Monterey County, California.

Intertidal $\times 14$

Type Locality: Station 89 of the *Puritan*-American Museum of Natural History Expedition to West Mexico: Los Frailes Bay, Baja California Sur (Gulf of California), 23°21' N by 109°25' W, 20-40 fathoms, fine sand, 19 April 1957, taken with the *Puritan* dredge.

Deposition of Types: Mollusk collection, American Museum of Natural History, New York, No. 128732 (Holotype) and AMNH No. 77942 (Paratypes).

Range: Specimens of *Cystiscus palantirulus* in other museum and private collections indicate a range limited to the southwestern part of the Gulf of California, from off Isla Monserrate to Cabo San Lucas, Baja California Sur (see Map), with one possible specimen from Acapulco, Guerrero. Collection records range from 6 to 80 m depth, plus 2 shore-collected dead shells. In addition to the type lot, we have examined the following material:

Los Angeles County Museum of Natural History:

Invert. Zool. Loc. 66-12, Cabo San Lucas, diving in 6-24 m near the pinnacle - 3 specimens

Invert. Zool. Loc. 66-17, dredged in 18 m between El Tule and Punta Palmilla, Baja California Sur - 35 specimens

Invert. Zool. Loc. 66-23, Between Punta Ventana and Isla Cerralvo, Gulf of California, 18-27 m - 12 specimens

California Academy of Sciences:

No. 24062, Bahía San Lucas - 2 specimens

San Diego Museum of Natural History:

No. 33654, Isla Espíritu Santo, Gulf of California - 1 specimen, juvenile

Locality L-2155, Isla Espíritu Santo - 3 specimens

Stanford University Paleontological Type Collection:

No. 9849, 10 miles north of Isla Espíritu Santo - one specimen (figured by COAN & ROTH, 1966)

Collection of Dr. Donald R. Shasky, Redlands, California: 37-73 m off Isla Monserrate, Gulf of California

Collection of Dr. S. Stillman Berry, Redlands, California: No. 10074, Acapulco, Guerrero - one specimen *cf.* *C. palantirulus*, but not recently re-examined

Discussion and Comparisons: A comparison of *Cystiscus palantirulus* with the other 2 west American species of *Cystiscus* is presented in Table 1.

Neither *Cystiscus jewettii* nor *C. palantirulus* has yet been taken in the area between Punta Abrejos and Cabo San Lucas (see Map). This apparent gap of about 400 coastal miles between the ranges supports the notion of *C. palantirulus* as a specifically distinct population. In addition, although *C. jewettii* exhibits consistent differences in form between the northern and the southern ends of its range (Plate 7, Figures 15, 16; and Table 1), and, although there is some individual variation between specimens from a single locality, there is no tendency for its populations to take on the distinctive shape of *C. palantirulus*.

In areas where their ranges overlap, *Cystiscus politulus* (Plate 7, Figures 13, 14) can be distinguished from *C. jewettii* or *C. palantirulus* by its narrower, more elongate aspect, and by its generally smaller size.

Etymology: The *palantiri*, from which the specific name is derived, are magical globes of crystal mentioned in the fiction of J. R. R. Tolkien.

Table 1

	<i>Cystiscus politulus</i>	<i>Cystiscus jewettii</i>	<i>Cystiscus palantirulus</i>
Size:	Small for genus; 2.9 mm (average of 10 from 6 localities)	Medium to large for genus; 4.8 mm (average of 2 northern specimens) 3.1 mm (average of 4 from Pta. Abrejos)	Medium for genus 3.2 mm (average of 27 from 9 localities)
Shape:	Elongate; not shouldered; length to width ratio 1.8 (average of 10 from 6 localities)	Ovate; shouldered; length/width ratio 1.5 (average of 6 from 3 local.)	Pear-shaped; shouldered; length/width ratio 1.6 (average of 27 from 9 localities)
Texture:		All species shiny, translucent	
Callousing:	Thin	Often thick, esp. on northern specim.	Thin
Spire:	Low to slightly elevated; not callus-covered	Low to well elevated (in south. spec.); northern specimens callus-covered	Low; sometimes mamillate
Outer Lip:	Slightly thickened at maturity	Much thickened at maturity	Slightly thickened
Aperture:	Anterior end rounded, even	Anterior end effuse, even	Anterior end effuse, twisted to left in dorsal view
Columnella:	Much the same in all 3 species; also variable from specimen to specimen		
Range:	Santa Barbara, California, to southern (see Map) Gulf of California; intertidal to 60 m	Monterey, California, to Pta. Abrejos, Baja California Sur; intertidal to 50 m	Isla Monserrate to Cabo San Lucas, Baja California Sur; 6 to 80 m